

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

Claims 1-13 (Cancelled)

Claim 14 (Currently amended): ~~A needleless injector comprising~~ A needleless injection system comprising a needleless syringe, wherein said syringe comprises microparticles composed of a material comprising a therapeutic agent and a carbohydrate or other glass-forming substance, wherein said microparticles further comprise an additive with a higher density than said therapeutic agent and said carbohydrate or glass forming substance, ~~such that~~ wherein said microparticles have a relative particle density of at least 80% of said material, wherein said microparticles have a shape factor of 1 to 5, and wherein said microparticles are delivered transdermally, transmucosally, subcutaneously or into the skin by said needleless syringe.

Claim 15 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein said microparticles have a relative particle density of at least 90%.

Claim 16 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein at least 95% of said microparticles by weight have a diameter of 10-500 μm .

Claim 17 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein at least 95% of said microparticles by weight have a diameter of 20-200 μm .

Claim 18 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein at least 95% of said microparticles by weight have a diameter of 30-100 μm .

Claim 19 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein said microparticles have a shape factor of 1 to 2.

Claim 20 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein said needleless injector uses compressed gas to accelerate said microparticles to a velocity at which they are capable of penetrating skin.

Claim 21 (Currently amended): A method of therapeutic treatment of an animal in need thereof which comprises transdermal, transmucosal or subcutaneous delivery of microparticles using a needleless ~~injector~~ injection system as defined in claim 14.

Claim 22 (Currently amended): A method of therapeutic treatment of an animal in need thereof which comprises delivery of microparticles into the skin using a needleless ~~injector~~ injection system as defined in claim 14.

Claim 23 (Currently amended): A needleless ~~injector~~ injection system as claimed in claim 14, wherein said microparticles comprise an excipient and said therapeutic agent is uniformly distributed throughout said microparticles or is in the form of smaller particles entrapped in a matrix.

Claim 24 (Currently amended): A needleless ~~injector~~ injection system as claimed in claim 14, wherein said therapeutic agent is a nucleic acid vaccine, ~~in the form of a protein, polypeptide, oligopeptide, or DNA encoding an antigen.~~

Claim 25 (Currently amended): A needleless ~~injector~~ injection system as claimed in claim ~~[[24]]~~ 14, wherein the carbohydrate is trehalose vaccine ~~is DNA encoding an HIV or hepatitis B antigen.~~

Claim 26 (Currently amended): A needleless ~~injector~~ injection system according to Claim ~~[[24]]~~ 14, wherein ~~the vaccine is in the form of DNA encoding an antigen and the DNA is in the form of a plasmid~~ said microparticles are delivered into a patient's skin, or delivered through the skin by the needleless syringe.

Claim 27 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein the microparticles are solid.

Claim 28 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein 80% of the microparticles are within a size range of 10 μm or 90% of the microparticles are within a size range of 15 μm .

Claim 29 (Currently amended): A needleless ~~injector~~ injection system according to claim 14, wherein the recipient of the microparticles is a mammal.